CLAIMS

What is claimed is:

1. A laser scanning apparatus comprising:

a light source configured to emit a light beam in a single direction;

a scanning device optically coupled with the light source and configured to scan the light beam along a photoconductor in a plurality of scan lines; and

a start-of-scan detector assembly configured to sample the light beam and initiate a start-of-scan operation of one of the scan lines of information to be written on the photoconductor, and wherein the sampled light beam is used to control a drive level of the light source.

2. The apparatus of claim 1, further comprising:

a control system configured to receive a signal from the detector assembly and to control the drive level of the light source based on the signal.

3. The apparatus of claim 2, wherein the control system comprises processing circuitry configured to compare an indication of the sampled light beam from the signal with a predetermined value.

4. The apparatus of claim 2, wherein the control system is configured to maintain the drive level of the light source at a predetermined drive level during scanning of the one scan line.

5. The apparatus of claim 1, wherein the light source comprises a vertical cavity surface emitting laser diode (VCSEL).

6. The apparatus of claim 1, wherein the light beam is sampled only once per scan line of information written on the photoconductor, and the light beam is sampled prior to writing the scan line of information on the photoconductor.

7. The apparatus of claim 1, wherein the scanning device comprises a rotating polygon mirror.

8. The apparatus of claim 1, wherein the start-of-scan detector assembly is disposed outside of a scan area of the photoconductor.

9. A laser scanning apparatus comprising:

a rotating scanning device configured to scan a light beam from a light source;

a photodetector optically coupled with the rotating scanning device and configured to sample the light beam from the rotating scanning device; and

a control system configured to receive an indication of the sampled light beam from the photodetector and to control a drive level of the light source responsive to the indication of the sampled light.

10. The apparatus of claim 9, wherein the light source is configured to emit light in a single direction.

11. The apparatus of claim 9, wherein the light source comprises a vertical cavity surface emission laser diode (VCSEL).

12. The apparatus of claim 9, wherein the control system comprises processing circuitry configured to compare an indication of the sampled light beam with a predetermined drive level value, and to control the drive level of the light source based on the comparison.

13. The apparatus of claim 9, wherein the control system is configured to maintain the light source at a constant drive level during scanning of a single line of information on the photoconductor.

14. A laser scanning apparatus comprising:

a scanning device configured to scan a light beam from a light source;

a photodetector optically coupled with the scanning device and configured to sample the light beam only once per line of information scanned onto a photoconductor; and

a control system configured to receive an indication of the sampled light beam from the photodetector and to maintain a drive level of the light source at a constant drive level during scanning of the line of information onto the photoconductor.

15. The apparatus of claim 14, wherein the light source is configured to emit a light beam in a single direction.

16. The apparatus of claim 14, wherein photodetector is utilized to initiate a start of scan operation of the line of information.

17. The apparatus of claim 14, wherein the sampled light beam is obtained before scanning a line of information onto the photoconductor.

18. A laser scanning apparatus comprising:

means for scanning a light beam from a light source onto a photoconductor;

means for sampling the light beam which causes information to be scanned onto the photoconductor; and

means for receiving an indication of the sampled light beam from the means for sampling and for maintaining the light source at a constant drive level during scanning of the line of information onto the photoconductor.

19. The apparatus of claim 18, wherein the light source is a vertical cavity surface emitting laser diode (VCSEL).

20. The apparatus of claim 18, wherein the light beam is sampled before writing a scan line of information onto the photoconductor.

21. The apparatus of claim 18, wherein the means for sampling is disposed outside of a scan area of the photoconductor.

22. A laser scanning method comprising:

emitting a light beam in a single direction using a light source;

providing a rotating scanning device and a photoconductor;

scanning the light beam along the photoconductor using the rotating scanning device;

sampling the light beam from the rotating scanning device using a sampling assembly; and

controlling a drive level of the light source responsive to the sampled light beam.

23. The method of claim 22, further comprising:

initiating writing of a scan line of information onto the photoconductor using the sampling assembly.

24. The method of claim 22, wherein the controlling comprises:

receiving the sampled light beam in a control system;

comparing an indication of the sampled light beam with a predetermined drive level value; and

controlling the drive level of the light source responsive to the comparison.

25. The method of claim 22, further comprising:

maintaining an output power of the light source at a constant level during writing of a single scan line of information onto the photoconductor.

26. The method of claim 22, wherein the light source comprises a vertical cavity surface emitting laser diode (VCSEL).

27. The method of claim 22, wherein the sampling is performed only once per scan line of information written on the photoconductor and prior to writing the scan line of information on the photoconductor.

28. The method of claim 22, wherein the sampling assembly is located outside of a scan area of the photoconductor.

29. A hard imaging device comprising:

a photoconductor;

a laser scanning apparatus configured to write scan lines of information onto the photoconductor, the laser scanning apparatus comprising:

a light source configured to emit a light beam in a single direction;

a scanning device optically coupled with the light source and configured to scan the light beam along the photoconductor to form the scan lines; and

a sampling assembly configured to sample the light beam and to initiate start-of-scan operations to write the scan lines onto the photoconductor, and wherein the sampled light beam is used to control a drive level of the light source; and

an image engine configured to form hard images from the written scan lines using media.

30. The device of claim 29, wherein the laser scanning apparatus further comprises:

a control system configured to receive a signal from the sampling assembly and to control the drive level of the light source based on the received signal.

31. An article of manufacture comprising:

processor-usable media comprising programming configured to cause processing circuitry to:

output a control signal to control a light source configured to generate a light beam used to scan a plurality of scan lines of information onto a photoconductor;

access an output of a start-of-scan detector assembly generated responsive to detection of the light beam thereby, wherein the output indicates

appropriate timing for initiation of writing of the information for the respective scan lines;

process the output of the start-of-scan detector assembly; and

adjust the control signal responsive to the processing of the output to adjust an intensity of the light beam generated by the light source.

32. The article of manufacture of claim 31, wherein the programming is further configured to cause the processing circuitry to adjust the control signal to provide the light beam having a substantially constant intensity during the scanning of the scan lines.